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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Paper No. 13

Application Number: 09/457,816
Filing Date: December 09, 1999
Appellant(s): SCHULZ ET AL.

Christopher L. Holt
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 6/17/02.

(1) Real Party in Interest

A statement identifying the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

(3) Status of Claims

The statement of the status of the claims contained in the brief is correct.

(4) Status of Amendments After Final

No amendment after final has been filed.

(5) Summary of Invention

The summary of invention contained in the brief is correct.

(6) Issues

The appellant's statement of the issues in the brief is correct.

(7) Grouping of Claims

Appellant's brief includes a statement that claims 1-12, 15 do not stand or fall together and provides reasons as set forth in 37 CFR 1.192(c)(7) and (c)(8).

(8) Claims Appealed

A substantially correct copy of appealed claim 1 appears on page 1 of the Appendix to the appellant's brief. The minor error is as follows: line 4 the word "connection" should be changed to "connection".

(9) Prior Art of Record

5,796,556	Boutaghou	8-1998
5,795,162	Lambert	8-1998

(10) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by Boutaghou (US 5,796,556). Boutaghou discloses a suspension assembly for use in a magnetic disk drive apparatus (see col. 1, lines 10-15); the disk drive further including: a selection means for positioning a transducer (not shown; E-block arm, i.e., actuator-see col. 1, lines 10-15); a conducting means 20 for providing electrical connection between the transducer and an external circuit; flexible circuit 14; transducer 28; and a magnetic disk 32 (see FIG. 3).

Claims 2-12, 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boutaghou (US 5,796,556) in view of Lambert (US 5,795,162). Boutaghou discloses a suspension assembly for use in a magnetic disk drive apparatus (see col. 1, lines 10-15); the disk

drive further including: a selection means for positioning a transducer (not shown; E-block arm); a conducting means 20 for providing electrical connection between the transducer and an external circuit; flexible circuit 14; transducer 28; and a magnetic disk 32 (see FIG. 3), with the flex cable includes a substrate 18 made of polyamide or other preferably suitable materials. While one of having ordinary skill would be well aware of all "preferably suitable materials", Lambert is cited to specifically show many of these materials (see col. 5-col. 6) and specifically a LCP known as Vectran (see col. 5, lines 40-65). Vectran, like other LCP's are considered to include desired characteristics for use in flexible circuits. From this, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilized the LCP "Vectran" to form the substrate 18 of Boutaghou. The motivation would have been: lacking any unobvious or unexpected results, choosing a LCP, e.g. Vectran, would have been provided through routine engineering optimization and experimentation, as taught by Lambert, since it would have at least been considered to be encompassed by "preferably suitable materials". For example, LCPs are known to be able to withstand high temperatures (520 degrees) before disintegrating which is an important consideration in flex circuit material. Furthermore, it is noted that it is within the knowledge of a skilled artisan to select known materials on the basis of its suitability for the intended use; See *In re Leshin*, 125 USPQ 416 (CCPA 1960).

It is noted with respect to claims 3 & 5 that the thicknesses of the substrate would have been provided through routine engineering optimization as well.

(11) Response to Arguments

A...Appellant contends (on pages 6-8 of the Brief) that in view of 35 U.S.C. §112, paragraph 6 and In re Donaldson Co., 29 USPQ2d 1845 (Fed. Cir 1994), claim 1 is allowable over Boutaghou such that the reference fails to disclose the corresponding structure needed for the means-plus-function language set forth in claim 1, and more specifically:

"Although the rejection of claim 1 asserts that the disc drive suspension assembly of Boutaghou has its own means 20 for providing electrical connection between a transducer and an external circuit, there is no disclosure in the teachings of Boutaghou that suggests the specific structures set forth in Appellant's specification."

In response, the Examiner maintains that the electrical traces 20 in Boutaghou, are considered to be structural equivalents to that of the instant specification for the claimed "conducting means".

Specifically, The United States Patent and Trademark Office has issued guidelines for the examination of claims written in means-plus-function form. See Supplemental Examination Guidelines for Determining the Applicability of 35 U.S.C. 112, P6, 65 FR 38510, Federal Register Vol. 65, No. 120, June 21, 2000, herein after referred to as "Guidelines". Part III of these Guidelines set forth requirements for establishing a prima facie case of equivalence by the Examiner. These involve whether or not the prior art element performs the same function, whether the prior art element is excluded by an explicit definition in the specification for equivalents, and whether the prior art element is in fact an equivalent of the means-plus-function limitation in the claim. In the instant case, 1) the prior art reference to Boutaghou performs the function specified in the claim (i.e., for providing electrical connection between the transducer and an external circuit); 2) the conducting means 20 of Boutaghou is not excluded by any

explicit definition provided in the instant specification for an equivalent; and 3) Boutaghou performs the identical function specified in the claim (providing electrical connection between the transducer and an external circuit) in substantially the same way (electrical traces 20) while producing the same results (electrical connection).

*The Examiner now points to specific references in Appellant's specification that will show that the claimed "conducting means" even in light of the above means-plus-function format guidelines does not include the "dielectric liquid crystal substrate" as argued by Appellant (see page 8, 2nd paragraph). On page 6, 3rd paragraph, Appellant discloses "The suspension assembly can have any of a variety of configurations. A first embodiment of a suspension assembly is described in Fig. 1. A similar suspension assembly is described in U.S. Patent 5,796,556 to Boutaghou, incorporated herein by reference." and further on page 7, last paragraph, "Flexible circuit 104 further includes electrical traces 150. Electrical traces 150 are electrically conductive and provide for electrical communication between the transducer 114 and external circuit 118." The noted electrical traces 150 (shown in FIG. 3) is equivalent to the electrical traces 20 in **Boutaghou** (as shown in FIG. 2 of **Boutaghou**). From this discussion, the Examiner maintains that the claimed "conducting means" and it's corresponding function, i.e., "for providing electrical connection between the transducer and an external circuit", is found in **Boutaghou**, and the claimed "conducting means" would not include the "dielectric liquid crystal substrate" as argued, since the "dielectric liquid crystal substrate" cannot provide electrical connections.

*The Examiner disagrees with Appellant, that as indicated by Appellant (see page 8, lines 9-10 of the Brief) that the specification from page 4, line 9, and extending through page 6, line 10, describes the claimed "conducting means". This portion of the specification appears to only

discuss the "dielectric liquid crystal substrate", which would NOT include the "conducting means", i.e., electrical traces, as discussed, supra.

B...Appellant asserts (on page 8 of the Brief) that "neither Boutaghou nor Lambert provide any disclosure directed to a disc drive that incorporates a flexible circuit having a dielectric liquid crystal substrate, as is claimed in independent claim 2."

It is the Examiner's position that the combination of the above references would have rendered obvious to a skilled artisan the present claimed invention. The main reference to **Boutaghou** clearly suggests that flex cable 14 includes carrier (substrate) 18 could be "made of polyamide or other preferably suitable materials" (see col. 2, lines 20-21). This would clearly provide a suggestion to a skilled artisan to look for other suitable materials in the flexible circuit art. The Examiner has utilized the teachings of **Lambert,** drawn to a flex circuit 36 in which a dielectric liquid crystal polymer (LCP), e.g., VECTRAN, is used for the base material (see col. 5, lines 40-65). It is considered that as a known material having certain favorable thermoplastic properties for flex circuits, e.g. LCPs are known to be able to withstand high temperatures (520 degrees) before disintegrating which is an important consideration in flex circuit material, it would have been considered a "suitable material" for the flex circuit substrate in **Boutaghou** as well.

*The Examiner further notes that on page 10, second paragraph, of the Appellants disclosure, it is stated that "A variety of suitable liquid crystal polymers are available commercially. For example, liquid crystal polymers under the tradename Vectra® from Celanese Speciality Operations..."

C... Appellants' further comments on pages 9-11 are not considered to add to the above argument, as the Examiner believes sufficient motivation to combine **Boutaghou** and **Lambert**

has been provided through the teachings of the references themselves and therefore the motivation is not "opinion-orientated" as suggested by the Appellent (see page 9, 2nd paragraph).

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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August 26, 2002

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